

CAREX TOVARENSIS (CYPERACEAE), A NEW SPECIES FROM VENEZUELA

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Study of herbarium specimens from Venezuela previously considered to belong to the North American species *Carex virescens* Willd. disclosed that they represented a distinct species and a new local Venezuelan endemic.

Carex towarensis Reznicek & G. A. Wheeler, sp. nov.—TYPE: VENEZUELA. Distrito Federal: Parque Nacional El Avila, ridgetop in vicinity of “Lagunazo,” between Pico El Avila and Pico Occidental, above the city of Caracas, subpáramo vegetation of low shrubs and grassy areas, with much *Pteridium caudatum* and evidence of fire, clumps in damp area, 2200 m, 21 Jul 1979, Nee & Whalen 16809 (holotype: F!; isotype: WIS!). Fig. 1.

Plantae cespitosae; culmi (6–) 15–60 (–75) cm alti; vaginae basales purpurascens, glabrae vel pilosae. Folia 6–10, plerumque basalia; laminae 8–35 cm longae, 1.6–5.2 cm latae; vaginae (0.7–) 4.2–9.5 cm longae, glabrae vel pilosae, infimae purpurascens; ligulae 1.8–5.6 mm longae. Inflorescentiae 1.2–6.5 cm longae; spicae plus minusve erectae; spica terminalis gynaeccandra, spicae laterales pistillatae; bractae infimae laminis (0.5–) 1.6–9 cm longis, (0.3–) 0.7–2.4 mm latis, evaginat. Perigynia 1.9–2.6 mm longa, 0.9–1.4 mm lata, ascendentia, trigona, viridia, erostrata. Achenium 1.4–2 mm longum, 0.8–1.1 mm latum. Styli marcescentes; stigmata 3. Antherae 3, ca 0.9–1.1 mm longae.

Plants cespitose with short rhizomes; roots pale brown; fertile culms (6–) 15–60 (–75) cm tall, ± stiffly erect, trigonous, smooth or sparsely antrorsely scabrous below inflorescence, with glabrous to sparsely pilose, strongly reddish purple and sometimes sparingly fibrillose bladeless basal sheaths. Leaves 6–10, all but the upper 1–2 basal; blades 8–35 cm long, 1.6–5.2 cm wide, plicate, sparsely pilose adaxially above ligule and abaxially, the margins smooth proximally, finely antrorsely scabrous distally, the widest leaves 2.3–5.2 mm wide; leaf sheaths (0.7–) 4.2–9.5 cm long, ± glabrous to pilose, the lowermost strongly reddish purple tinged near base; inner band of sheaths stramineous to pale brown, pilose, especially on lower sheaths, to glabrous, ± red-dotted, the apex shallowly concave, slightly thickened, often finely short ciliate; ligules 1.8–5.6 mm long, rounded to acute, the free portion stramineous to pale brown, often sparsely ciliate with long hairs. Vegetative shoots ca 15–28 cm tall; leaves 7–9, ± similar to those of fertile culms; pseudoculms 2.5–6.5 cm long. Inflorescences 1.2–6.5 cm long, with the

spikes usually all strongly overlapping, the lowest two 0.2–1.3 (–2.9) cm distant; spikes single at nodes, erect to ascending, with the upper sessile and the lower on stiff, \pm smooth peduncles 0.6–9.5 mm long; lowermost bracts with blades (0.5–) 1.6–9 cm long, (0.3–) 0.7–2.4 mm wide, sheathless, the upper bracts much reduced. Spikes 3–5, the terminal gynaeandrous, the lateral pistillate. Terminal spikes 8–20.5 mm long; staminate portion 3–10.5 mm long, 0.8–1.6 mm wide, ca 4–20-flowered; pistillate portion 5–13 mm long, 3–5.2 mm wide, ca 8–60-flowered; peduncles 1.5–3.8 mm long. Lateral spikes 4–21 mm long, 3.5–5 mm wide, ca 8–75-flowered, occasionally with a small secondary spike up to 5 mm long at base. Pistillate scales 1.4–2.7 (–3.9) mm long, 0.9–1.3 mm wide, obovate, acute to acuminate-awned, with an awn up to 0.9 (–2.4) mm long, the upper margins \pm finely ciliate, hyaline with a green center, 3-nerved. Staminate scales 2–3 mm long, 1–1.4 mm wide, narrowly obovate, obtuse to acuminate, the upper margins ciliate, hyaline with a green center, 3-nerved. Perigynia 1.9–2.6 mm long, 0.9–1.4 mm wide, appressed-ascending, trigonous with \pm flat, rhombic-elliptic faces, green, sparsely pilose at least in the distal two-thirds, strongly red-dotted, essentially sessile, 2–5-nerved, tapering to a \pm incurved, truncate, hyaline orifice. Achenes 1.4–2 mm long, 0.8–1.1 mm wide, trigonous with \pm flat to slightly concave, elliptic to obovate sides, \pm loosely enveloped by the perigynia, staminateous to pale brown with \pm blunt yellowish angles, \pm sessile. Styles withering; stigmas 3. Anthers 3, ca 0.9–1.1 mm long.

Known only from the coastal range of northern Venezuela, where it occurs from 2000 to 2300 m in moist sites in areas dominated by low shrubs and grasses (subpáramo vegetation). Specimens in ripe fruit have been collected essentially throughout the year.

ADDITIONAL SPECIMENS EXAMINED. **Venezuela.** ARAGUA: Prope Coloniam Tovar, 1854-5, *Fendler 1604*, (GH, K, US); Colonia Tovar and vicinity, 21 Mar 1921, *Pittier 9306* (GH, MICH, NY, US); Colonia Tovar, 21 Oct 1926, *Woronow 7195* (LE).—DISTRITO FEDERAL: Lagunazo, 1865, *Moritz* (BM-2 sheets); Lagomazo, Colonia Tovar, 22 Dec 1915, *John 435* (US); Silla de Caracas, Coastal Range, La Cienega, 26-29 Dec. 1918 *Pittier 8310* (US); La Cienega, 1939, *Vogl 1009* (NY); Silla de Caracas, 15 Feb 1969, *Baruch 28* (NY); El Avila, Lagunazo, 31 Jul 1976, *Manara s.n.* (NY).

Carex towarensis is the second South American species referred to *Carex* section *Porocystis* Dumort. (section *Virescentes*). The epithet refers to Colonia Tovar in the state of Aragua, the general collecting locality for many of the specimens.

Previous authors, starting with Boott (1858), knew of these Venezuelan plants, but did not consider them distinct from the North American *Carex virescens*. Kükenthal (1909) referred them to *C. virescens* var. *costata* (Schwein.) Dewey, as did Steyermark and Huber (1978). However, the type of *C. virescens* var. *costata* is from Pennsylvania, and the name is a synonym of *C. virescens* (Mackenzie 1935). Mackenzie (1935, pg. 322) considered the Venezuelan *Carex virescens*-like plants to be "a closely allied but distinct species," but no name for it has heretofore been validly published, although Mackenzie annotated several herbarium sheets with the name "*C. phyllopoda* Mackenzie." The name *Carex phyllopoda* was also used, as a nomen nudum, by Knuth (1926), who reported *Pittier 9306* under this name (and *Fendler 1604* under the name *C. virescens* var. *costata*!).

Carex towarensis differs from *C. virescens* by having shorter anthers ca 0.9–1.1 mm long, strongly red-dotted perigynia, less pubescent leaves, especially distally,

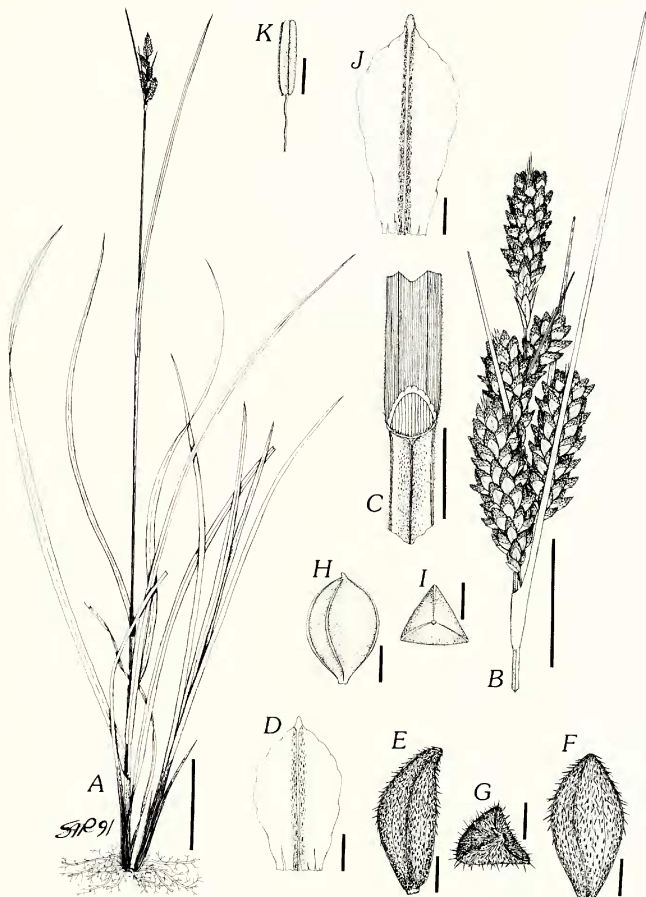


FIG. 1. *Carex tovarensis*. A. Habit. B. Portion of inflorescence. C. Sheath and ligule. D. Pistillate scale. E. Perigynium, side view. F. Perigynium, front view. G. Perigynium, top view. H. Achene, front view. I. Achene, top view. J. Staminate scale. K. Anther. Bar equals 5 cm in A, 1 cm in B, 5 mm in C, and 0.5 mm in D–K. Drawn by Susan A. Reznicek from Nee & Whalen 16809 (WIS).

shorter and more densely flowered lateral spikes 4–21 mm long, and a more compact inflorescence with the lowest two spikes 0.2–1.3 (–2.9) cm distant. *Carex virescens* has longer anthers ca 1.5–2.5 mm long, finely and inconspicuously red-dotted perigynia, strongly and uniformly pubescent leaves, longer lateral spikes (12–) 18–35 mm long that are often \pm loosely flowered at the base, and a more open inflorescence with the lowest two spikes (1.2–) 1.8–3.5 (–5.8) cm distant. Plants of *C. towarensis* are also \pm stiffly erect and with the inflorescence stiff and straight. *Carex virescens* is a spreading plant with the inflorescence lax and flexuous or arcuate. The North American *Carex swanii* (Fernald) Mack. is similar to *C. virescens*, but smaller and with shorter anthers, spikes, and inflorescences. It, too, differs from *C. towarensis* in having finely and inconspicuously red-dotted perigynia, strongly and uniformly pubescent leaves, and being a spreading plant with the inflorescence lax and flexuous or arcuate.

The only other member of *Carex* section *Porocystis* that occurs in South America is *C. boliviensis* Van Heurck & Müll.-Arg. This species ranges from the Sierra de Córdoba in central Argentina to Peru, and also occurs in central Mexico (Hermann 1974); it grows primarily on grassy slopes and moist meadows at high elevations (up to 4100 m). *Carex towarensis* differs from *C. boliviensis* in a number of features, the most salient of which are given in the key below.

Perigynia pilose, at least distally, strongly red-dotted; basal leaf sheaths reddish purple; rhizomes short.

C. towarensis.

Perigynia glabrous, not conspicuously red-dotted; basal leaf sheaths brownish; rhizomes elongate.

C. boliviensis.

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